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PERSPECTIVES 89

AMERICAN PRODUCTIVITY & QUALITY CENTER

Perspectives

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Perspectives

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Introduction

United States productivity performance continued mixed in 1987. Manufacturing showed good performance, both against its past performance and against many other countries'. The U.S. service industries continue to make essentially no progress, thus dragging down the overall statistic to a rate of improvement of less than 1 percent. The United States is still unable to raise the standard of living of the average citizen, as measured by real compensation per hour. We are still approximately at the level of 10 years ago, and 1987 actually showed a decline in real standard of living.

There is certainly a perception of prosperity in many respects, but there is an increasing consensus among non-political observers that the current prosperity is built on unusually favorable exchange rates that benefit export manufacturers, the increasing prevalence of additional workers in the family to prop up standard of living, and foreigners' willingness to finance our increasingly embarrassing governmental overspending. We have nearly reached maximum utilization of capacity in many of the basic industries, so further short-term improvement is unlikely. Short of a bold political move towards reducing the U.S. budget deficit, we can expect a near-term recession, which would exacerbate some of the unstable conditions listed above.

What remains, then, for the average business person is that famous phrase "continuous improvement." Until national economic order can be regained, we must all do the best we can at the company and department levels to improve the businesses with which we are associated.

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I. *U.S. Productivity in the 1980s*

Long-term U.S. productivity performance shows declining growth and recent leveling out. The splendid, unprecedented productivity performance of the 1948-65 period has been replaced by ever-decreasing rates of growth of both labor productivity and total factor productivity. The 1980s have demonstrated a partial recovery in the overall statistic. In **Figure 1**, 1980-87 performs a great deal better than 1973-80. As we shall see, this does not indicate general improvement throughout the economy but rather specific improvement in certain areas. The outlook for beyond 1987 is more of the same; overall stability at a minuscule improvement rate.

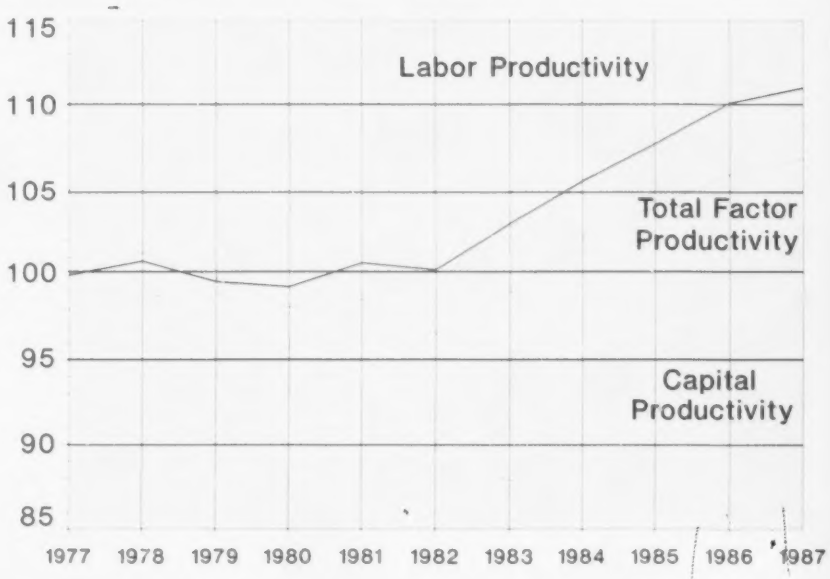
Figure 2 shows graphically the improvement of the recent past. After no progress at all in the 1977-82 period, the business recovery since 1982 has carried labor productivity and even capital productivity with it.

Figure 1
U.S. Business Economy

	Annual % Growth	
	Labor Productivity	Total Factor Productivity
1948-65	3.2	2.7
1965-73	2.1	1.5
1973-80	0.5	0
1980-87	1.6	1.2

Source: American Productivity & Quality Center

Figure 2
Productivity Trends in U.S. Private Business, 1977-1987



Source: American Productivity & Quality Center

Figure 3
U.S. Productivity, Goods and Services, 1975-87

Source: American Productivity & Quality Center

Figures 3a and **3b** break down Figure 2 into goods and services industries. With this we are able to begin interpreting the relatively stagnant intermediate-term performance and the relatively good performance of the last few years. Note that virtually all of the progress is in the goods sector. Goods and services improvement rates tracked very closely up to about 1980, but then goods continued improving and services showed only modest improvement in labor productivity and almost no improvement in total factor productivity.

It is frequently asserted that productivity statistics about the service industries should be ignored because of measurement difficulties. It is true that the output of service industries—or, more precisely, the quality change in the output of the service industries—is more difficult to interpret. But it has yet to be proven that any errors in reporting the service industry are systematically biased in one way or another. The service industry data could be off by a fraction, but there is no proof that the error is any more likely to be on the positive side than on the negative side. It could be that some service industries are doing even worse than portrayed here.

It is not fair to complain about the service industry in general. In **Figure 4** it is clear that some service industries have done a splendid job in improving productivity over the intermediate and short term, whereas others have done less well. Note that the communications industry remains the long-term champion improver with a better record than manufacturing overall. The communications industry, which is essentially telephone companies, showed substantial retardation of its improvement rate after the breakup of AT&T in 1983. But in 1987 there was a return to substantial improvement.

Figure 4
Productivity Performance by Segment

	Annual % Growth			
	1979-87		1987	
	Labor Pty.	Total Factor Pty.	Labor Pty.	Total Factor Pty.
Business Economy	1.4	0.8	0.8	0.8
Farming	6.9	5.7	0.9	0.4
Communication	5.1	2.4	7.9	5.9
Manufacturing	3.3	2.5	3.4	3.2
Mining	2.4	0.2	9.2	7.0
Trade	1.7	1.0	0	(0.9)
Utilities	1.4	0.8	2.8	0.7
Railroads	1.1	(0.7)	(0.4)	(2.0)
Miscellaneous Services	0.7	0.9	(1.3)	(0.9)
Finance & Insurance	0.3	(1.2)	1.4	(1.6)
Non-Rail Transportation	(0.3)	(0.3)	1.3	2.7
Real Estate	(1.6)	(2.3)	(1.9)	1.7
Construction	(1.7)	(1.4)	(2.5)	(2.1)

Source: American Productivity & Quality Center

Figure 5
Best/Worst Productivity Performance, Manufacturing Industries

5a. Labor Productivity

Annual % Growth

1979-87

Best		Worst	
Non-Elec. Machinery	11.0	Tobacco	(1.1)
Rubber	4.1	Printing	(0.9)
Elec. Machinery	4.0	Transportation Equipment	0.6
Misc. Manufactures	3.9	Furniture	0.7
Chemicals	3.6		

1987

Best		Worst	
Non-Elec. Machinery	9.6	Textile	(2.7)
Leather	8.1	Transportation Equipment	(2.2)
Tobacco	8.0	Primary Metal	(1.8)
Apparel	7.1	Printing & Publishing	(1.4)
Rubber	6.4	Investments	1.5
Chemicals	6.0		

Source: American Productivity & Quality Center

5b. Total Factor Productivity

Annual % Growth

1979-87

Best		Worst	
Non-Elec. Machinery	9.5	Tobacco	(5.2)
Rubber	4.1	Petroleum	(1.8)
Misc. Manufactures	3.2	Printing	(1.1)
Textile	3.0	Primary Metal	(0.2)
Chemicals	2.8	Transportation Equipment	(0.2)

1987

Best		Worst	
Non-Elec. Machinery	8.8	Transportation Equipment	(3.1)
Leather	8.0	Printing & Publishing	(1.8)
Apparel	7.2	Textile	(1.3)
Rubber	7.2	Primary Metal	(0.7)
Chemicals	6.8	Instruments	(0.3)

Source: American Productivity & Quality Center

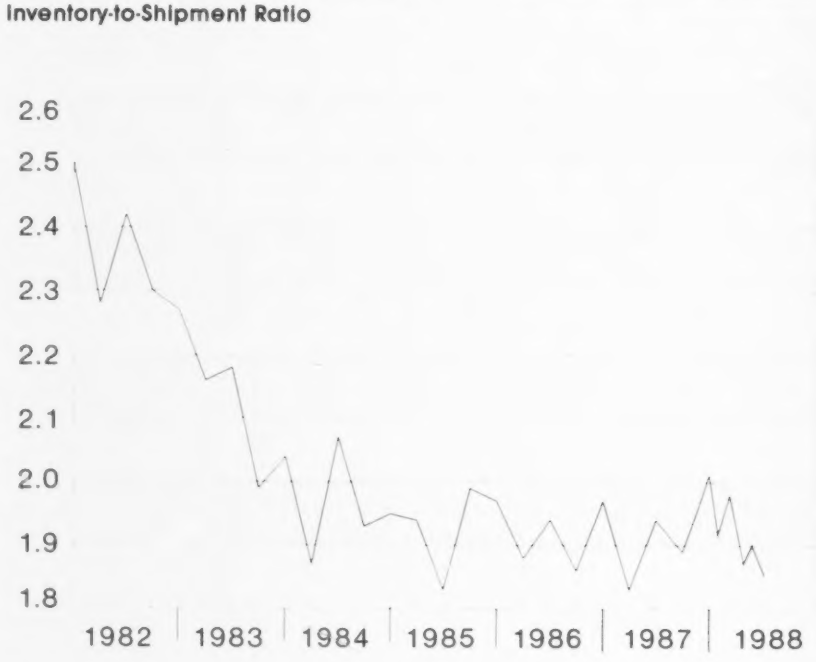
The public utilities segment has done approximately as well as the business economy as a whole over the long term. However, there are some distinctly sub-par performances in the areas of real estate, non-rail transportation, finance and insurance, and miscellaneous services (which includes health care). Even within manufacturing industries, performance varies wildly. **Figures 5a** and **5b** show labor and total factor productivity performance for many manufacturing industries. The champion performer in both 1979-87 and the year 1987 is non-electrical machinery (mechanical machinery as opposed to electrical). Other good performers in manufacturing are the rubber industry, the chemical industry, and textiles. Among the poorest over the longer term are tobacco, petroleum (in regard to total factor productivity), printing and publishing, and transportation equipment. The reasons for both good and bad performance vary widely.

Most strong-performing industries in 1987 had high output with little or no labor and/or capital input increase, often due to greatly increased utilization of capacity and spreading of relatively fixed labor costs. This is true in communications, apparel, chemicals, rubber, and non-electric machinery, for example. Others, such as mining, fabricated metals, and electrical machinery, had improvement due mostly to a declining labor force.

The worst performers in 1987 were industries that could not restrain their labor force growth, even if output increases were modest. These include textiles, construction, trade, real estate, and miscellaneous services. Only a few industries had poor performance driven by output weakness (transportation equipment and railroads, for example).

Most of the best performers have improved their fundamental manufacturing skills in addition to being the beneficiaries of a strong output pull. This involves adaptation of quality improvement and just-in-time manufacturing techniques, where the stimulus has often come from Japanese success in this area. One indicator of whether just-in-time and similar techniques are having an effect is the inventory-to-shipment ratio in key industries. **Figure 6** shows the fabricated metal products inventory-to-shipment ratio, and it is interesting to note that substantial improvement was made during the period 1982-85. Some of this is the effect of the business cycle—strong demand pulling ahead of manufacturing capability. A true transition to just-in-time would show net continued progress after 1985, which as of now is not being demonstrated. We would hope for further improvement as new plants are built utilizing these new techniques.

Figure 6
Fabricated Metal Products

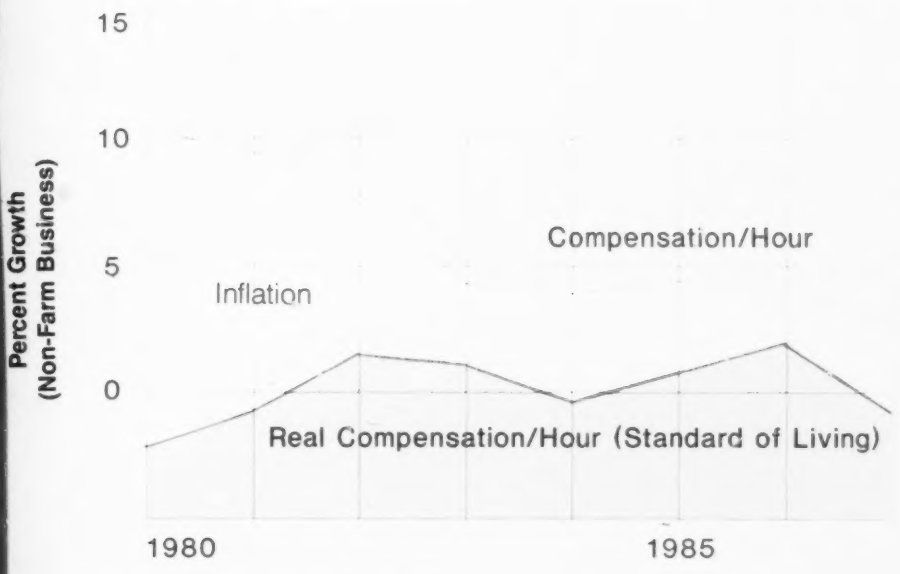


Source: U.S. Department of Commerce

Figure 7
Productivity and Standard of Living

7a. Business View

7b. Worker View



Source: Bureau of Labor Statistics

Figure 7 deals with the question of standard of living as indicated by real compensation per hour. **Figure 7a** shows the dramatic reduction in unit labor cost growth caused by the reduction of inflation and accompanying lowering of the wage increase pressures. What keeps this from being entirely good news is the fact that the labor productivity component has not grown. The ideal situation would be reasonable compensation per hour growth and substantial labor productivity improvement, which would allow a decrease in unit labor cost. With low inflation we would still see an increase in real compensation per hour.

U.S.
Real Compensation per Hour
(Non-Farm)

	% Increase per Year
1960-70	2.3
1970-78	1.3
1978-87	(0.1)

As is clear above, real compensation per hour has not increased for the last 10 years. The number of workers per family has increased substantially.

thus maintaining an increasing trend in real *family* income but not in real *individual* worker income. If the economy continues to need multiple workers from a family, this situation can be stable, but the persistent lack of improvement in the service industries can largely be attributed to overhiring (the other side of the coin of "full employment"). There is no point in hiring many people for a company if they do not contribute to additional output. Thus "good" employment statistics can be a warning that chances for productivity improvement are being frittered away. Discipline in hiring, which is perhaps what the service industries need most to improve their productivity, can stop in its tracks the trend toward increased family income as a result of multiple family members working.

The dominant influence of the federal deficit and of foreign financing of that deficit is shown in **Figure 8**. Note the decline over time in domestic private savings from 9.8 percent to 7.1 percent of net national product. At the same time, the federal deficit has increased from 1.9 percent of net national product to 4 7 percent of net national product. This was an inherently unstable situation largely "saved" by a substantial increase in inflow of foreign funds. In 1985-88, inflow of foreign private funds reached 3.6 percent of net national product. Thus, the national overall savings rate was kept at 6 percent of net national product largely through the influence of the foreign inflow. As long as the foreign investment community is satisfied with U.S. economics, this can be maintained. But with the presidential election now finished—and with less patient foreigners expecting changes in U.S. economic policy—the absence of those changes may result in gradual dissillusionment leading to withdrawal of foreigners and/or a substantial increase in interest rates to keep the foreign money here.

Figure 8
U.S. Savings Rate

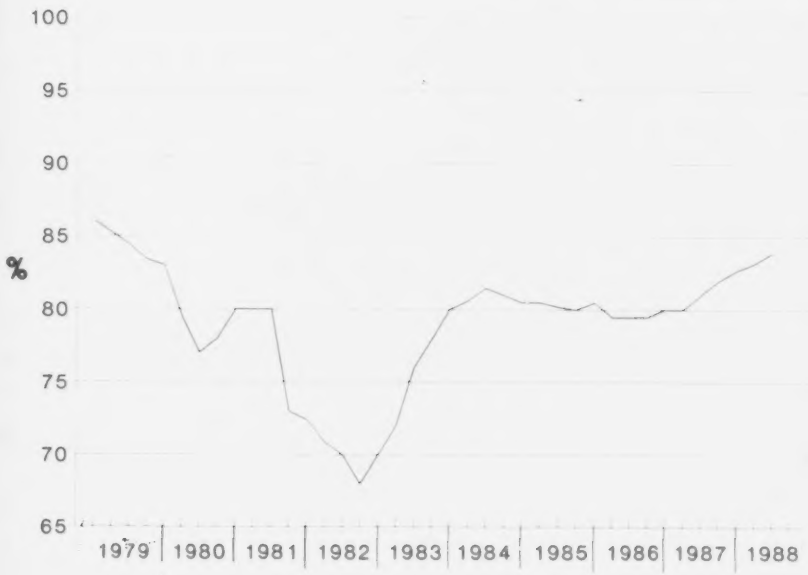
	% of Net National Product		
	1970-79	1980-84	1985-88
Private Savings			
Domestic	9.8	8.3	7.1
Foreign Inflow	(0.3)	0.7	3.6
Total Private	9.5	9.0	10.7
Federal Deficit	(1.9)	(4.0)	(4.7)
Total Savings Rate	7.6	5.0	6.0

Source: Bureau of Economic Analysis

II. *Interpretation of U.S. Performance*

Figure 9 shows the situation in capacity utilization in manufacturing. Capacity utilization is always a two-sided coin. When the numbers are high, the economy is usually in a period of potential prosperity. Manufacturing companies are spreading their overhead thinly and thus have a reasonable chance of being profitable. However, the outlook for still further improvement requires a favorable capital investment situation. With no additional capacity to use, it is necessary to build additional capacity here or abroad. As we approach the record high capacity utilization levels of the late 1970s, it is useful to look in more detail at capital investment numbers.

Figure 9
Capacity Utilization, Manufacturing, 1979-1988



Source: Federal Reserve Board

Figure 10 shows U.S. capital stock growth by special categories.

Note that the annual growth in capital stock has fallen off from 3.6 percent in the 1970s to 2.8 percent in the mid-1980s. This would not be much of a problem for regular manufacturing companies except for the fact that there is a substantial growth in information technology capital. If information technology capital investment is given priority, the money available to routine plant capital investment is quite limited. When the total capital stock is broken into manufacturing and non-manufacturing, it is evident that the growth of manufacturing capital stock has fallen off seriously.

Figure 10
U.S. Capital Stock

Information "Diversion"

Average % Growth

	1970s	1982-87
Total Capital Stock	3.6	2.8
Information Technology Capital	9.5	12.4

Replacement "Diversion"

Annual % Growth

	1960s	1970s	1980s	1987
Manufacturing Capital Stock	4.7	3.3	1.5	0.8
Materials Producers	4.5	3.1	(0.1)	(1.1)
Advanced Producers	4.9	3.5	3.5	2.8

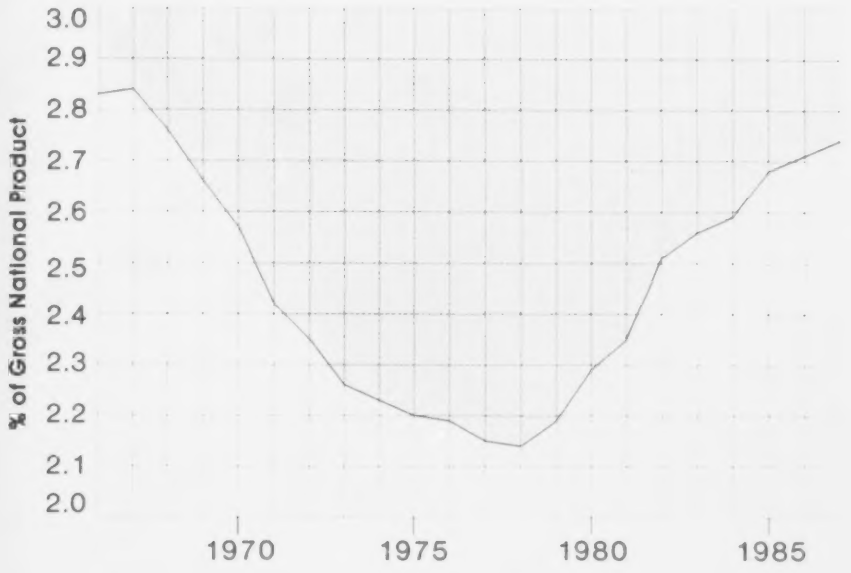
Capacity Expansion Share of Plant/Equipment Spending (%)

	1960s	1970s	1980s	1987
Manufacturing Total	21.4	18.4	7.9	4.1
Materials Producers	21.3	19.2	(0.9)	(6.5)
Advanced Producers	21.7	17.2	16.1	12.4

Source: Morgan Stanley

In 1987 manufacturing capital stock increased only 0.8 percent. When manufacturing capital stock increase is broken into producers of advanced goods and commodity materials producers, it is clear that all the net money is going to the advanced producers. Anything short of growth in capital stock suggests that the investment money is simply replacing of old equipment. Both information technology capital and replacement capital are worthy and much needed. Productivity enthusiasts are properly excited over reductions in the average age of capital stock. But the commodity materials producers of the 1980s are not even fully replacing old capacity, much less growing.

Figure 11
U.S. Research and Development, 1966-1987



Source: National Science Foundation

To further hone in on the question, Morgan Stanley has broken down plant and equipment spending to show what proportion has been used for capacity expansion. For manufacturing as a whole, the number has declined from the previous 20 percent level to 4 percent, and the number is negative for the materials producers. Once again this shows that information technology is getting its money, advanced producers are getting some money for capacity expansion (although less than before), but the standard materials producers are in a capital-poor situation. This is further support for the view that we have reached the end of our expansion and the recession looms, not only for financial reasons but also for plain old mechanical bottleneck reasons.

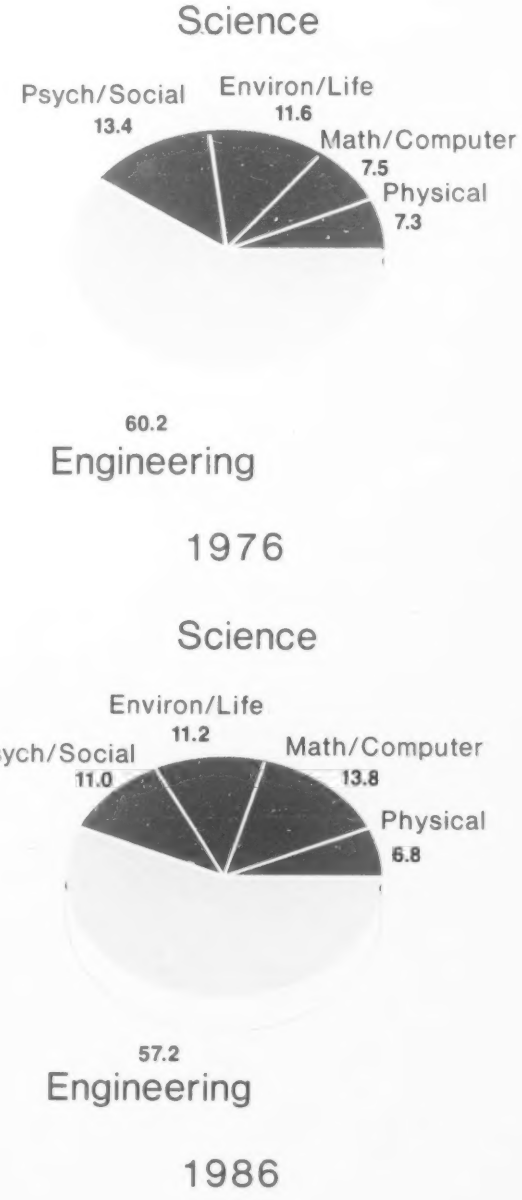
One of the success stories of the recent past is shown in **Figure 11**. U.S. research and development as a percent of gross national product (GNP) by now has fully recovered from the serious research recession of the 1970s.

We are back up to over 2.7 percent of GNP in research and development, just barely short of the record 2.90 percent in 1964. This expenditure is approximately evenly split between federal and non-federal spending. The comparable numbers for Japan, West Germany, France, and the United Kingdom are all in the general vicinity of 2.5 percent.

There are other encouraging developments within the scientific community. **Figure 12** demonstrates the breakdown of the science and engineering stock of this country, first by scientific or engineering field and then by sex. The evolution of the scientific and engineering disciplines shows that the relative number of engineers has slipped a little and in the scientific area—which overall has grown a little—the overwhelming growth is in math and computers. Physical science, environmental and life science, and psychological and social science have all declined to make room for math and computer specialists. Female membership in the science and engineering communities has increased dramatically. Females now make up 27 percent of scientists compared to 19 percent 10 years ago. Over 4 percent of today's engineers are female compared to less than 2 percent 10 years ago. This trend may represent one of the most positive developments we have in our competition with Japan and other

Figure 12
Employed Scientists/Engineers

12a. By Field



Source: National Science Foundation

Far Eastern countries. We are decades ahead in making use of all members of the population.

Inflation plays a role in everything that goes on in the economy. It helps determine the true standard of living and distorts business decisions of all kinds. A substantial reduction in inflation has taken place in the 1980s. However, performance is not uniform by industry. For example, inflation in medical products and services has continued to be well above the inflation rate of the economy as a whole.

12b. By Sex

	1976			1986		
	Male	Female	Total	Male	Female	Total
Science	33.5	7.7	41.2	34.3	13.0	47.3
Engineering	57.9	0.9	58.8	50.6	2.1	52.7
Total	91.4	8.6	100.0	84.9	15.1	100.0

Source: National Science Foundation

Figure 13
Specific Inflation (Annual % Increase)

	1979-81 Average	1982-84 Average	1985-87 Average
CPI, Urban, Total	11.7	4.9	3.0
Food	9.0	3.4	3.2
Housing	13.1	4.7	3.3
Transportation	14.7	3.6	0.6
Medical	10.3	8.9	6.8

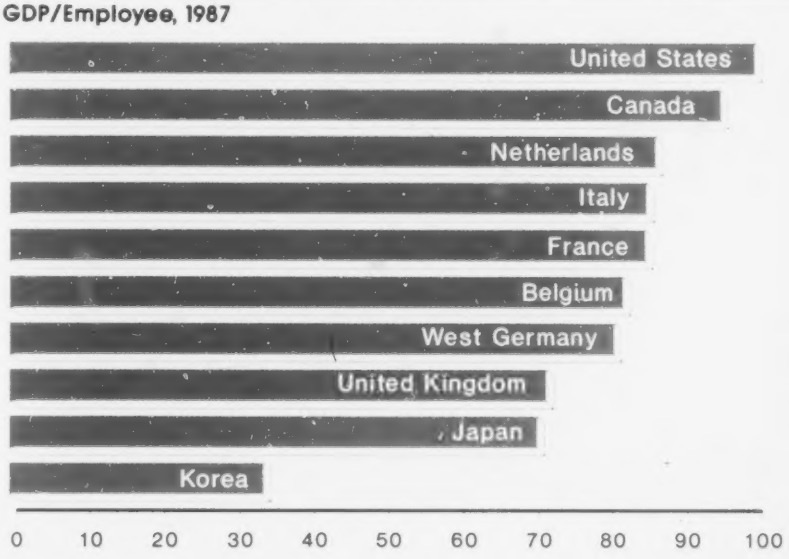
Source: U.S. Department of Labor

III. *International Productivity*

The United States is still the world leader in labor productivity level (see **Figure 14**). The Bureau of Labor Statistics calculates gross domestic product per employee using a purchasing-power-parity basis. This is a more stable indicator than raw exchange rates and, on this basis, the United States is well ahead of other countries. If they were available, more detailed statistics would show that on an industry-by-industry basis the U.S. has many industries in which it does not lead.

Before complacency sets in, glance at **Figure 15.** This demonstrates the rates of improvement of the countries shown in **Figure 14.** Notice that everyone is running faster than the United States! Thus, the level numbers will tighten up rapidly and it is possible to calculate the time when (theoretically) these countries will pass the United States.

Figure 14
International Productivity Levels



Source: Bureau of Labor Statistics (Purchasing-Power-Parity Basis)

Figure 15
International Productivity Growth

	Annual % Growth 1979-86	
	Labor	Total Factor
Japan	2.8	1.7
France	2.3	1.2
Belgium	2.3	1.3
Germany	2.0	0.8
U.K.	1.9	1.0
Netherlands	1.6	0.4
Italy	1.3	0.7
Canada	1.1	(0.3)
U.S.	0.6	0.1

Source: Organization for Economic Cooperation and Development

Figure 16
Total Factor Productivity Growth

	Annual % Growth 1979-83				
	U.S.	Japan	Germany	France	U.K.
Total Manufacturing	1.7	3.8	0.7	1.4	1.5
Food	3.5	(2.1)	1.1	0.9	1.1
Textiles	3.7	8.8	1.4	1.8	1.4
Paper	0.7	3.4	1.4	2.1	(2.9)
Chemicals	1.5	2.9	(0.2)	3.0	1.2
Primary Metal	(4.5)	(5.0)	(0.6)	1.1	1.3
Machinery	2.4	8.2	0.7	0.9	1.9
Total Private Services	(0.1)	0.2	1.1	0.2	1.2
Trade	(0.4)	3.2	0.2	(0.3)	(1.5)
Transportation	(0.1)	2.4	0.4	(1.0)	2.3
Finance	(0.4)	(1.8)	1.1	(0.4)	1.6
Construction	(1.0)	(6.1)	(0.4)	0.2	(0.4)
Mining	(4.7)	3.7	(3.7)	NA	3.4
Agriculture	(0.7)	(1.2)	3.1	1.3	4.7

Source: Organization for Economic Cooperation and Development

Figure 17
International Manufacturing Labor Productivity

	Annual % Growth		
	1973-79	1979-86	1987
Japan	5.5	5.6	4.1
France	5.0	3.6	3.7
West Germany	4.3	2.8	1.3
Italy	3.3	3.3	3.7
Sweden	2.6	3.0	2.6
Canada	2.1	1.4	1.7
United States	1.4	3.1	2.8
United Kingdom	1.1	4.4	6.9

Source: Bureau of Labor Statistics

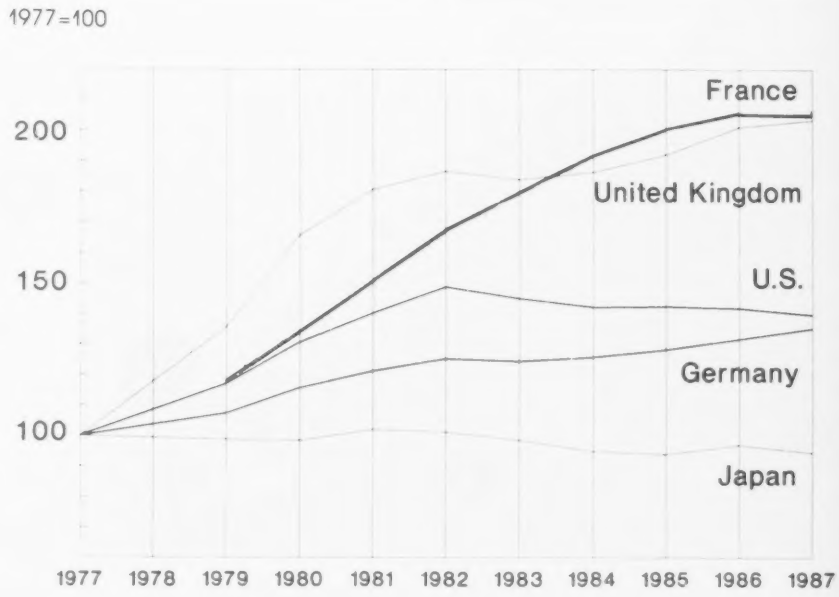
Clearly, industry-by-industry performance is of more direct interest than performance of the country as a whole. The wide variety of performance in different industries is shown in some recent data put together by the Organization for Economic Cooperation and Development. **Figure 16** shows total factor productivity growth for the period 1979-83 in several key countries. Though this is now five years old, it does demonstrate the wide variance of performance among countries and between industries within any given country. To no one's surprise, Japan shows the best overall performance in manufacturing. The U.S. has a strong lead in the food industry, but Japan has particularly strong performance in textiles and machinery. Japan also shows a good record in paper and chemicals, two industries for which they have no natural advantage. Everyone does poorly in services. The Japanese show good numbers in trade and transportation and the U.K. shows the beginnings of good performance in transportation and finance. What is shocking is that the U.K. shows good performance in mining; perhaps this is shrinkage-type productivity improvement rather than expansion productivity. The United States' usual advantage in agriculture was not evident during this period.

Figure 17 shows some more recent data on manufacturing labor productivity growth in different countries. Japan's

perpetual lead has vanished in 1987. This is not particularly surprising given the dollar-yen exchange relationships, nor should it be expected to continue. It should also be pointed out that 4.1 is not a pitiful growth rate by any means. However, the United States and the United Kingdom have shown over the last few years a substantial recovery from their performance in the 1970s just as West Germany, in particular, has shown a substantial decline from its performance in the 1970s.

Figure 18 shows the trend in unit labor cost of manufacturing in these countries on a national currency basis. Since 1982 the U.S. has a net improvement in unit labor cost, as does Japan. The other countries show continuing increases.

Figure 18
Increase in Unit Labor Costs in Manufacturing
(National Currency Basis)



Source: U.S. Department of Labor, Bureau of Labor Statistics

It is fully recognized that there are other important and influential countries in the world besides the big seven. What is lacking, unfortunately, is sufficient statistical coverage to be able to make comparisons. The only statistic that is readily available for almost all countries is GNP per capita. This is not really a productivity measure; it is more reflective of a country's economic and social situation. Nevertheless it gives an approximate idea of economic well-being, and the changes in position from year to year are indicative of good times or bad times in these countries. **Figure 19** shows the top 55 reporting countries of the world (Russia does not report).

Figure 19
Level of GNP per Capita for the Top 55 Reporting Countries, 1987

$000/Capita	Western Hemisphere	Europe	Pacific Basin	Africa & Near East
18.5+		Switzerland		
18.4	United States			
12.9-18.3	Canada	Norway Iceland Luxembourg Denmark West Germany Finland France	Japan	United Arab Emirates Kuwait
7.9-12.8	Bahamas	Austria Netherlands Belgium United Kingdom Italy	Australia Hong Kong New Zealand Singapore	Qatar
4.2-7.8	Barbados Trinidad	Ireland Spain Greece		Saudi Arabia Israel Oman Libya Cyprus
1.8-4.1	Venezuela Antigua Argentina Suriname Panama Uruguay Brazil Mexico	Malta Portugal Yugoslavia Hungary Poland	Korea Malaysia	Seychelles Gabon Algeria South Africa Syria

Source: World Bank

The United States is second to Switzerland in GNP per capita. There are other countries, mostly in Europe, that are close to catching up. The OPEC countries have all slipped several notches on the list with the decline in oil prices. Mexico has moved up among the leaders in the Western Hemisphere from a much lower position, due to its opening of trade and its drive for competitiveness. Lest we become too complacent about the world situation, there are more than 50 countries that did not make this list, and in order to miss this list GNP per capita has to be less than $1,800 per person.

The dramatic change in the U.S. dollar exchange rate relative to the world is shown in **Figure 20**. Rarely have we seen such dramatic change

Figure 20
U.S. Dollar Trade-Weighted Exchange Rate

Source: U.S. Department of Commerce

Figure 21
Relative Import Prices

Source	Real Exchange Effect 1985-88	Estimated Percent "Passthrough"	Net Change in Import Price
Europe	+58%	70%	+40%
Canada	+15%	70%	+11%
Japan	+60%	25%	+15%
Other Asia	+9%	0	0

Source: Morgan Guaranty; BEA; Goldman Sachs

Figure 22
Money Markets, October 1988

	Nominal Interest Rates			Real Interest Rates	
	3-Month Money Market	Long Term Government Bonds	Last 12 Months Inflation	Short Term	Long Term
United States	8.3%	8.9%	4.2%	4.1%	4.7%
Canada	10.4%	9.9%	4.1%	6.3%	5.8%
France	8.0%	8.8%	3.0%	5.0%	5.8%
Italy	11.9%	10.7%	4.6%	7.3%	6.1%
West Germany	5.0%	6.2%	1.4%	3.6%	4.8%
United Kingdom	12.1%	9.4%	5.9%	6.2%	3.5%
Japan	4.3%	4.6%	0.7%	3.6%	3.9%

Source: *The Economist*

in two years. Some say that we are now leveling out, but others are doubtful.

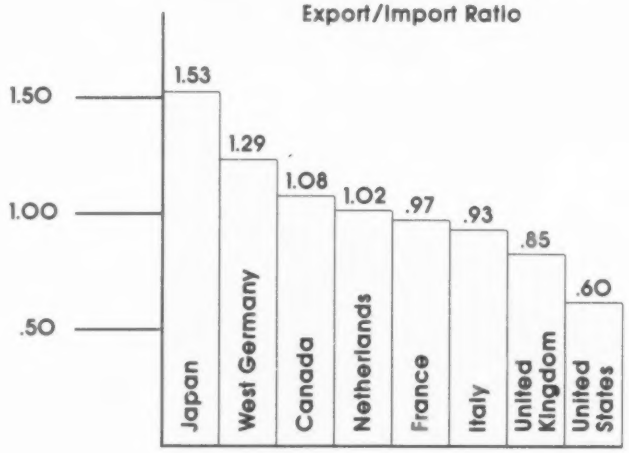
With the drastic change between the dollar and the yen and between the dollar and European currencies, we would normally expect the U.S. to stop buying high-priced foreign goods as the dollar becomes cheaper and cheaper. **Figure 21** demonstrates that this is not automatically so, because astute foreign suppliers, with a long-term view of the marketplace, do not pass on all of the exchange rate effect. Notice that whereas Canada and Europe passed on 70 percent of the real exchange effect to higher U.S. prices, the Japanese only passed on approximately 25 percent of the exchange effect. This holds the import price to a level that maintains their share in the U.S. market. The other Asian countries have the advantage of having currencies tied to the dollar, so there is little exchange effect and no need to worry about a change in import price. While the Europeans in effect accept that they are going to lose market share because of exchange transactions, the Japanese are willing strategically to accept temporary lower margins to avoid losing share in the key U.S. market.

Figure 22 shows the state of the international money markets in October 1988. The real interest rates show the U.S. from one half to a full point higher than Japan, roughly equal Germany, but a whole

point or more lower than the rest of Europe. This is a slight widening of the U.S./Japan differential compared to last year.

The United States made a slight improvement in its international trade balance in 1987. The export/import ratio went from .56 in 1986 to .60 in 1987, still a poor performance by most standards. The absolute level of the trade balance remains approximately as high as it was in 1986. What is encouraging is that finally we have an increase in exports in 1987, largely reflecting exchange rates. What is distressing is that imports continue to increase in spite of decline in imported oil prices and, presumably, generally higher prices of foreign goods. Part of this is due to Japanese price restraint in the United States market, but part of it is due to insufficient attention on the part of American customers to the origin of the goods for which they are paying outrageous prices.

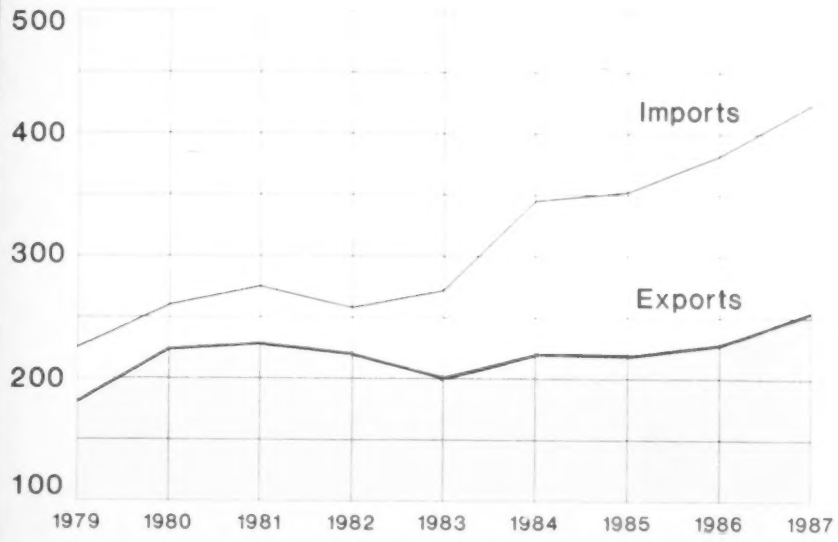
Figure 23
International Trade Balances, 1987



Export (FOB)	$Billions	Imports (CIF)
254	United States	424
148	France	153
293	West Germany	228
116	Italy	125
93	Netherlands	91
131	United Kingdom	154
230	Japan	150
94	Canada	88

Source: Organization for Economic Cooperation and Development

Figure 24
Deterioration of U.S. Trade Balance



Source: Organization for Economic Cooperation and Development

Figure 25
U.S. Trade Balance, 1987*

Positive Contributions (Export>Import)	$Billion
Chemicals	+12
Aircraft	+9
Agriculture & Food	+7
Negative Contributions (Import>Export)	
Automotive	-60
Other Durable Consumer Goods	-37
Fuel & Petroleum	-37
Non-Durable Consumer Goods	-30
Primary Metal	-19
Electrical Machinery	-7
Net Effect of Everything Else	+10

*Census Basis, Preliminary

Source: U.S. Department of Commerce

Figure 25 shows the 1987 U.S. trade balance broken down into key industries. We are now down to a positive balance only in chemicals, aircraft, and (barely) agriculture and food. The large negatives are automotive, fuel and petroleum, and a wide variety of consumer goods.

89 PERSPECTIVES

With the dollar so cheap, politicians and others are talking about the U.S. being "on sale." Highly publicized purchases have been made by foreigners in many U.S. businesses. **Figure 26** shows the relative difference from 1983 to 1987 in the direct investment accounts, both foreigners investing in the U.S. and the U.S. investing abroad. Though increases have clearly been made in foreign investment in the U.S. (almost doubling in four years), the U.S. investment abroad has increased by 50 percent. The U.S. investment balance has become less positive, but it is still positive: the United States has $47 billion more investments abroad than foreigners have in the U.S. The main negative balance contributors are real estate and wholesale and retail trade. Contrary to popular belief, the finance and insurance balance has actually widened in favor of the United States. The number of foreigners investing in finance and insurance in the United States has nearly doubled, but U.S. investment abroad in finance and insurance has increased 2.5 times.

Figure 26
Direct Investment Abroad by Industry

$ Billion

	1983			1987		
	U.S. Abroad	Foreign in U.S.	U.S. Balance	U.S. Abroad	Foreign in U.S.	U.S. Balance
Manufacturing:						
Computers	8	1	+7	20	2	+18
Chemicals	19	16	+3	27	30	-3
Vehicles	10	1	+9	16	2	+14
Other	46	30	+16	64	57	+7
Total Manufacturing	83	48	+35	127	91	+36
Petroleum	58	18	+40	66	35	+31
Finance/Insurance	26	20	+6	62	38	+24
Wholesale and Retail Trade	25	26	-1	36	47	-11
Real Estate	1	15	-14	2	24	-22
All Other	14	10	+4	16	27	-11
Total	207	137	+70	309	262	+47

Source: U.S. Department of Commerce

Figure 27 shows a summary of world economic factors. The United States GNP growth is in the middle of the pack and improving. U.S. inflation is also in the middle of the pack, and our unemployment rate is among the lowest.

Figure 27
World Economic Factors

	Real GNP Growth		Consumer Price Inflation		Unemployment
	Average % per Year 1982-86	% Last 12 Months*	Average % per Year 1977-86	% Last 12 Months*	% Latest*
Australia	2.8	2.2	8.6	7.1	7.0
Belgium	1.4	N/A	5.8	1.3	11.4
Canada	2.4	4.9	7.7	4.1	7.8
France	1.4	3.5	9.3	3.0	10.2
Italy	1.4	3.1	13.6	4.6	16.5
Japan	3.5	5.6	3.3	0.7	2.6
Netherlands	1.3	3.2	4.0	0.9	14.0
Spain	2.0	N/A	13.4	5.7	19.2
Sweden	2.3	1.0	8.9	5.5	1.8
Switzerland	1.4	2.8	3.4	2.0	0.6
United Kingdom	2.9	4.0	8.7	5.9	8.0
United States	2.5	3.7	6.8	4.2	5.4
West Germany	1.4	3.4	3.5	1.4	8.7

*Last 12 months for GNP is usually July 87-June 88
Last 12 months for inflation is usually October 87-September 88
Latest for unemployment is usually September 88

Source: *The Economist,* Central Intelligence Agency, Organization for Economic Cooperation and Development

Figure 28 shows the "misery index," which includes inflation and unemployment. The United States is back down to the level of 1970 and has forged a significant lead over West Germany, whose misery index is at its highest in recent history.

Figures 29 and **30** highlight two potential problems that commentators have noted in regard to the United States. Figure 29 demonstrates that the United States is addicted to advertising. Advertising in the United States is about 2.4 percent of GNP in 1986, whereas in Japan, West Germany, and France the number is under 1 percent. To the extent advertising can be considered "waste" in the spirit of total quality improvement, there is a large waste factor to overcome. To the extent that advertising is considered lubrication for the channels of commerce, perhaps this is is a progressive expenditure.

More serious is the controversy over comparative health care. Figure 30 shows that the United States spends between two and three times as much on health care per person as other major countries.

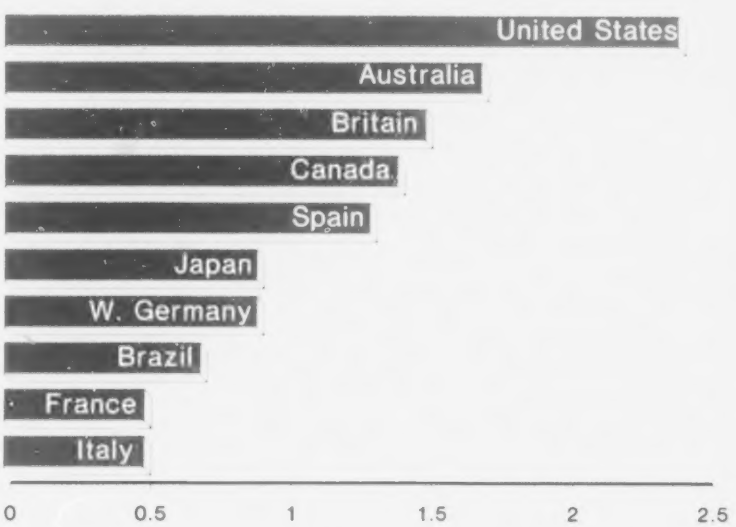
Figure 28
Misery Index*

	1970	1975	1980	Current
U.S.	16	25	28	15
Japan	10	20	13	6
West Germany	5	14	12	19
France	10	20	25	23
United Kingdom	12	30	30	24
Italy	16	29	36	38

*Inflation rate + twice unemployment rate

Source: *The Economist*

Figure 29
Advertising As % of GNP, 1986



Source: Dentsu; Starch INRA Hooper; *The Economist*

Figure 30
Comparative Health Care

	U.S.	Sweden	France	West Germany	U.K.
$ Spent per Person, 1986*	1,926	1,195	1,039	1,031	715
Doctors per 10,000 Population	23	26	24	26	14
Hospital Beds per Doctor	2.5	5.3	4.5	4.2	5.5
Infant Mortality Rate per 1,000 Live Births	10.4	5.9	7.7	8.6	9.5

*Converted at Purchasing-Power-Parity

Source: Organization for Economic Cooperation and Development; *The Economist*

Yet the simple measures of quality of health care show health care in the United States to be no better than in other major countries and, in some cases, worse. The United States has roughly the same number of doctors per population as most of Europe (except for the United Kingdom, where the ratio is unusually low). The United Kingdom responds by having more hospital beds per doctor, whereas the United States, for all the discussion of overcapacity in hospitals, still has half the hospital beds per doctor of most of Europe. U.S. infant mortality rates are still the highest among these countries in spite of the large expenditure. It was noted above that inflation in health care is the worst sector in the economy. It seems that something must be done!

So as usual, the situation and outlook are mixed. It is hard to get away from the dominating position of the U.S. budget deficit. The U.S. is clearly dependent on the interest and goodwill of foreign investors to keep afloat and allow continuation of newly found manufacturing competitiveness. However, U.S. service industry costs are part of the underlying costs of U.S. manufactured products to be sold abroad. Without further attention by the service industries to improving their "blocking and tackling," the long-awaited productivity improvement will not materialize and severe damage will be done to the chances of sustained U.S. economic growth.

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